## CLAIMS:

- 1. A protease having two aspartate residues in a catalytically active structure, wherein a first aspartate residue resides in an  $X_1GX_2GD$  motif and a second aspartate residue resides in an  $X_3X_4DX_5$  motif, wherein  $X_1$ ,  $X_2$ ,  $X_3$  and  $X_5$  are independently selected from Ala, Val, Leu, Met and Ile, and  $X_4$  is an aromatic amino acid, and the motifs  $X_1GX_2GD$  and  $X_3X_4DX_5$  reside in a transmembrane region.
- 2. The protease according to claim 1, characterized by having the sequence  $PALX_6YX_7V$ , wherein  $X_6$  and  $X_7$  independently have the same meaning as  $X_1$  and preferably are Leu or Ile.
- 3. The protease according to any of claims 1 to 2, characterized by having one of the sequences SEQ ID Nos. 1 to 8 and 18, 19.
- Nucleic acids coding for a protease according to at least one of claims 1 to 3, preferably having SEQ ID No. 9-17 or 20.
- 5. Inhibitors, characterized by inhibiting the expression or activity of the protease according to any of claims 1 to 3.
- 6. An antibody directed against proteases according to any of claims 1 to 3.
- 7. A method for the identification of inhibitors, characterized in that the activity of the proteases is measured according to any of claims 1 to 3 in the presence of potential inhibitors.
- 8. A medicament or diagnostic agent containing a protease according to any of claims 1 to 3, a nucleic acid according to claim 4, an inhibitor according to claim 5, and/or an antibody according to claim 6.

3

- 9. Use of the medicament or diagnostic agent according to claim 8 for the diagnosis or treatment of diseases which are causally related with the cleavage of the amyloid precursor protein, especially Alzheimer's disease.
- 10. Use of the medicament or diagnostic agent according to claim 8 for the diagnosis or treatment of diseases which are causally related with a disturbed degradation of hydrophobic signal peptides.
- 11. Use of the medicament or diagnostic agent according to claim 8 for the diagnosis or treatment of diseases which are causally related with the accumulation of unfolded proteins in the endoplasmic reticulum.
- 12. Use of the medicament according to claim 8 for influencing the presentation of hydrophobic peptides by histocompatibility complex molecules in conditions such as viral infection, cancer or rejection after transplantation.
- 13. A cell line, characterized by not expressing any protease according to at least one of claims 1 to 3 and/or not containing any nucleic acid according to claim 4.